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Arboretum *bulletin*

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Arboretum bulletin

A JOURNAL OF GENERAL HORTICULTURAL INFORMATION
PUBLISHED QUARTERLY BY THE UNIVERSITY OF WASHINGTON
ARBORETUM FOUNDATION • SEATTLE 5, WASHINGTON

No part of this BULLETIN may be reprinted without the authority of the Arboretum Foundation.

VOLUME XXIV NUMBER 1

Spring, 1961

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COVER PHOTO:

Rhododendron adenopodum

PHOTO BY: E. F. (WHITIE) MARTEN

The Arboretum Bulletin

Vol. XXIV No. 1 Seattle, Wash. Spring, 1961

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To keep memberships in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and The Bulletin will be discontinued.

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☐ Life	$500.00
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University of Washington Arboretum
Seattle 5, Washington

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A Letter from the President

TO MEMBERS OF THE
ARBORETUM FOUNDATION

Greetings:

With the cold of the winter almost forgotten and the lengthening days bringing promise of new leaves and blossoms everywhere, Foundation members are continuing their plans for an active year. The January Board meeting gave evidence of the enthusiasm of committee chairmen for the work immediately ahead.

The total program for the year includes a strong drive for new members which already is showing good results. We have been advised that the location of the Empire Expressway will shortly be announced and that it will injure the Arboretum to a minimum extent, though all members would be happier if the Expressway could have been kept entirely out of the area. The Ways and Means committee have ideas for some needed improvements. Some additions to the Japanese Tea Garden are on the drawing boards. The Floral Hall project is beginning to take definite shape. Memorials are getting attention and details are being planned for the Garden Tours.

The Education Program with its many classes is going ahead and making a splendid record. A distinguished visitor from England is expected to give an illustrated lecture under our auspices in May. And so our work goes on, with many of our members taking an active part.

May I again remind you that the Arboretum Foundation is your organization, formed to assist the University of Washington in developing the 200 acres into a laboratory for students as well as a beautiful park to be enjoyed by all.

Yours very truly,

William D. Shannon,
President

SPRING IN THE ARBORETUM

The warm, wet weather of the first 45 days of 1961 was reflected in the large number of plants flowering in the Arboretum by mid-February. A count made on St. Valentine's day this year turned up some 90 species or clones of trees and shrubs and about 17 herbaceous plants, mostly bulbs, flowering to some degree.

A brief list of some of these precocious plants is found below:

Arctostaphylos manzanita—manzanita

Camellia reticulata; C. X Williamsii; C. japonica clones

Chaenomeles species and varieties—flowering quince

Cornus mas—cornelian cherry

Corylopsis platypetala

Corylopsis spicata

Erica carnea—winter heath, in variety

Erica lusitanica—Portuguese heath

Hamamelis japonica varieties—Japanese witch hazel

Hamamelis mollis—Chinese witch hazel

Hamamelis vernalis and varieties—spring witch hazel

Narcissus varieties—daffodils

Prunus subhirtella 'Autumnalis'

Prunus subhirtella 'Rosea'—Whitcomb cherry

Rhododendron dauricum

Rhododendron erubescens

Rhododendron moupinense

Rhododendron mucronulatum

Rhododendron 'Praecox'

Rhododendron 'Seattle Springtime'

Rhododendron sutchuenense var. *Giraldii*

Salix aegyptiaca (S. Medemii)

Spiraea Thunbergii—Thunberg's spirea

Sycopsis sinensis—Chinese fig hazel

Umbellularia californica—Oregon myrtle

Viburnum Tinus—Laurustinus

J. A. W.

This Is Your Arboretum, Kept Alive By Your Support

We are pleased to welcome the following new members (January 1 thru March 10, 1961): *Sponsor*—Isaacson Iron Works. *Supporting*—L. T. Murray. *Contributing*—Warren H. Bean, Henry C. Isaacson, Sr. *Sustaining*—Mrs. Wm. K. Bledsoe, Mrs. John A. Blethen, Mrs. Dorothy Bonny, Mrs. Homer L. Boyd, C. W. Callahan, Mrs. Walter C. Cameron, Mrs. J. B. Connelly, Mrs. Thomas I. Evans, C. Clement French, Garland Florist, Joseph L. Hughes, Ikebana International, S. E. Kenney, Mrs. Racey E. Kilmer, G. Mizuki, Ohara & Ko-Enshu School, Mrs. R. R. Rathfelder, Mrs. George W. Thomas, University Flowers, Canadian Primula & Alpine Garden Society, Greenlake Garden Club, Seattle Civic Garden Center. *Annual*—Mrs. Nafe A. Alley, Mrs. Roy B. Anderson, Mrs. Robert M. Arnold, Mrs. James E. Arnot, Mrs. James V. Atkins, Mrs. Ernest P. Ballard, Mrs. S. W. Baker, Mrs. J. F. Ballinger, Mrs. Charles B. Barzen, Mrs. Arthur S. Biddle, Mrs. John T. Biggar, Richard J. Brooks, Mrs. Claude Chatillon, Mrs. P. E. Clouston, Mrs. H. Handley Cloutier, Mrs. Richard Connelly, Mrs. Carl B. Crumb, Jr., Mrs. J. F. Cushing, Mrs. Ernest P. Dean, Mrs. Richard DeMille, Mrs. M. N. Dennis, Mrs. Alan B. Ferguson, Mrs. Charles M. Fogg, Mr. and Mrs. Lloyd Foster, Mrs. Elizabeth Sutton Gustison, Mrs. John Faris Hall, Mrs. Harold L. Hawkins, Mrs. D. H. Holcomb, Mrs. G. A. Holland, Mrs. D. W. Hunsinger, Mrs. Eric Hvalsoe, Jack Johnstone, Jr., Mrs. Blair F. Kline, Gaylia E. Krebsbach, Mr. and Mrs. C. F. Lathrop, Mrs. Ernest Lauber, Jr., Mr. and Mrs. Frank G. Lykes, Miss M. Magaard, Mr. and Mrs. James Marlin, Mrs. John I. McDowell, Mrs. Frank H. Molitor, Mrs. Herbert G. Moore, Mrs. Calvin P. Morgan, Mrs. Lloyd F. Neale, Mrs. J. K. Needham, Mrs. Brenton R. Nelson, Mrs. Harry J. Rahn, Alan Rogers, Mrs. Wayne Samples, Mrs. C. F. Schmid, Mrs. Karl Sjoblom, Mrs. G. L. Sterling, Mrs. James W. Watson, Mrs. J. R. Wicklund, Mrs. J. Rodney Worden, William Yorozu, Mrs. John Youell.

We are most grateful to the following members who have raised their dues to: *Sponsor*—E. B. Clark. *Supporting*—Mrs. E. K. Bishop, Mr. and Mrs. Donald G. Graham, Mrs. W. Hilding Lindberg, Mr. and Mrs. Pendleton Miller, Mrs. Hazel M. Pringle. *Contributing*—Mrs. Henry C. Isaacson, Mr. and Mrs. Wm. D. Shannon, Mrs. O. B. Thorgrimson. *Sustaining*—Mrs. Stephen E. Anderson, Mrs. Douglas Ball, Mrs. Thomas Balmer, Mrs. James Brinkley, Darrah Corbet, Mrs. George Cropper, Dr. J. K. Holloway, Albert A. King, Mrs. W. Webb Moffett, Mrs. Jay Morrison, Mrs. George Powell, Mr. and Mrs. Roger W. Spurr.

Six Outstanding Rhododendron Groups in the Arboretum

J. A. Witt

RHODODENDRONS are a tractable group of plants for landscape purposes, usable individually as specimen plants or massed together in drifts and screens. Naturally those of us with small gardens must of necessity use larger rhododendrons as single specimens, or perhaps in two's or three's, but just as naturally the Arboretum is able to mass its plantings, often putting half dozen or so big specimens of the same species or cultivars together in one group. There are definite advantages to this method of planting aside from its pure landscape effect. Many times the rhododendrons seem to enjoy each other's company and appear to be mutually supporting and protecting each other. From the standpoint of flowering alone mass plantings certainly are preferable, since if one plant fails to perform well this year its neighbors will probably "cover up" for it and the total effect is not marred by one or two recalcitrant plants. With this preamble let us look at some half dozen of the more notable massed plantings in the Arboretum.

Chronologically we may first consider the magnificent group of the Szechuan rhododendrons growing along the upper trail on the south bank of Rhododendron Glen, on both sides of the trail. The group of six plants on the south side of the trail are the variety *R. sutchuenense* var. *Giraldii* described in the Spring 1956 issue of this Bulletin. The larger collection, growing below the trail to the northwest, is the typical *R. sutchuenense,* differing from the variety in lacking the purple blotch in the throat of the corolla and in flowering a few days later. These are old plants, probably over twenty-five years, and have begun to develop the mature habit of the big species with large gray-brown trunks which become more evident as the lower branches die off and the crown grows upward. Even so, certain plants in the mass, especially those planted below the trail, still are clothed to the ground with the 9 to 12 inches long leaves, and in March one may look down on the round trusses of rosy-pink flowers. Due to slight differences in exposure and perhaps in genetic make-up the flowering season of this group may last from late February to late March or early April, and the big fat flower buds promise a better than average and earlier show for 1961.

The next massed planting to flower is to the west on the south side of the Glen, in the *Triflorum* series. These are the stately blue-purple *R. Augustinii* plants rising out of a surf of smaller and variously colored relatives. Again these are old plants—6 to 9 feet tall with trunks 2 to 3 inches in diameter—probably well over twenty-five years old. Colorwise these plants range from a rich, vibrant, almost true blue to pale, washed blue, with none of the eight plants matching any of the others in shade or hue. When seen from the service road on the north bank of the Glen on a clear morning in early May they remind one of nothing so much as blue waves breaking against a green shore.

The scene moves now across Rhododendron Glen, from the south bank to the north, where in the bed containing members of the *Thomsonii* series we find one of the smaller mass plantings in point of number, but certainly one of the most striking. In the center portion of this southwest-facing bed a group of yellow flowered *R. Wardii* hold forth, surrounded by relatives in the same series. The *R. Wardii* planting consists of about six plants ranging in size from four feet to nearly seven feet tall by as much across, attractive for their small, neat, dark green, oval leaves and compact habit during all seasons of the year. In mid-May the many loose trusses of pale yellow, bowl-shaped flowers blend beautifully with the clear white bells of *R. puralbum,* planted below, and the gray-green of the noble firs, *Abies procera,* above.

About the same time that the group of *R. Wardii* is in full flower in the Glen, another and much larger massed planting in Loderi Valley comes into its own. This is the wonderful collection of *R. Loderi* seedlings planted in the large center bed of that area. There are about 38 plants here, raised from seed of *Rhododendron Loderi*—variety unspecified—that came to the Arboretum in 1940, with perhaps ten or twelve others scattered elsewhere in the valley. The center bed was planted in 1949 and is now definitely overcrowded; many of the larger plants must be over eight feet tall and would be more across if they had more elbow room. Overcrowding seems to suit them however, since there is always a mass of flowers there in mid-May. In shape of flower most of the seedlings resemble their parents and have the soft fragrance of the *Loderi* clan, but none have so large a bloom as 'King George.' In color they range from pure white through cream to delicate rose with a rare rosy-purple as the deepest hue. Some individuals are very choice plants and a few outstanding, such as an unnamed cream with a green eye and 'Mrs. F. McEwan,' a soft persian rose, the first but not the last of the group to be named, we predict. No other grouping in the Arboretum looks so much at home as these growing amid the tall native trees in that shady valley bearing their name.

The next group often waits for nearly a month after the Loderi seedlings before bringing forth their flowers, since they are among the last of our rhododendrons to flower. On the south bank of Rhododendron Glen at the very top of the slope is a semi-circular planting of *Rhododendron* 'Azor,' which we received in 1938 as small plants. About twenty of the original thirty-nine are still with us, loose of habit, some now twelve feet or more tall, and a few still somewhat battered by the November 1955 freeze, but the whole putting on a breath-taking display of pink to pink tinged tomato colored flowers in mid to late June. It is most probable that this group, as was the last, are seedlings of hybrid parents rather than clonal material, but for a mass planting the color variations found in plants of hybrid parents adds a certain charm and spice to a large group. The flower trusses of the 'Azor' children are all loose, the floret is a long tube flaring at the end, covered with sticky glands, and regardless of color possesses that luminescent quality that is so typical of *R. Griersonianum* hybrids.

Our final large planting is difficult to fit into chronological order since its flowering period extends from March to June. This is the so-called "*Fortunei* bed" in the northwest area of Rhododendron Glen. The rhododendrons here are all of the series *Fortunei,* and start the flowering calendar with our friend *R. sutchuenense,* represented on the west side of the group by three or four large plants. No sooner has the Szechuan rhododendron opened than its blushing relative *R. erubescens* with pale pink flowers comes on, followed by *R. Fargesii* on the east side and *R. oreodoxa* at the south end. By now it is May and *R. Houlstonii* with white to palest pink flowers towers over the deeper pink bells of a fine form or hybrid of *R. orbiculare* on the western side of the bed. Finally, in late May or early June, *R. discolor,* eighteen feet tall and stateliest of the group, perfumes the air from its large white trumpets held high over the rest, one of the tallest rhododendrons in the Arboretum. Lovely as is the sequence of flowering, the lasting beauty of this bed lies more in color and textural effect of the combined foliage of its huge plants. The western facade is the most impressive where a sheer wall of green rises ten to fifteen feet above the trail, forming a fascinating mosaic of leaf shapes and colors. Four full months of flower, twelve of handsome and varied foliage—what other genus of plants can offer so much?

These half dozen plantings are only a small sample of the wealth of rhododendrons we are growing in the Arboretum and include only well established groups. Many lesser areas are equally striking and might well be included if space permitted, but then it is far better to see the Glen or Loderi Valley in May than to depend on written descriptions.

Reports from Our Rhododendron Growers

No report of the work of our local rhododendron breeders has appeared in our pages for a number of years.

Believing that many of our readers would like to know something of what has been done during the post-war years we requested and obtained short accounts from three Washington and one Oregon breeder of their recent work and productions. We believe these will give a fair picture of the types of hybrids lately originated in this region.

DWARF RHODODENDRONS
In Your Garden and Mine

ELIZABETH CAPERCI*

DWARF RHODODENDRONS for our Northwest area is quite a tremendous subject to discuss. It would take pages to list the varieties suitable to our particular part of the country. We who are partial to rhododendrons are lucky to live in this area that is so ideal for our favorites. The soil and climatic conditions are excellent for these most versatile of plants. So it is difficult to choose just a few species and hybrids to use as examples.

It would be easy to write about dwarf rhododendrons if it were spring with lots of bloom in the garden. However, this is February, and *R. moupinense* with its lovely cream-colored flowers is the only one blooming now, a prevue of what we may expect through June. The first blossoms are always exciting, and a little unnerving for fear that a frost might come along and spoil them. Many of us may find ourselves covering the plant each evening so that we may enjoy it for a few more days. *R. mucronulatum* will soon be showing its lavender-pink color on bare stems. The buds of *R. cilpinense* look like they will break at any time. They almost look like flowers themselves with their brown veining. The plants are so loaded with buds that the light pink blooms will cover it and hide some of the leaves.

Although we grow over 200 varieties of dwarf rhododendrons on our two acres, we feel that we have barely scratched the surface. We hope to collect many more in time to come. We take over 20,000 rhododendron and azalea cuttings each year, along with planting dozens of flats of seedlings. This is not as hard work as it might sound, but it is time-consuming. We don't tire of starting new cuttings or trying to hybridize a new variety. There is always that certain feeling of accomplishment to see the newly formed roots on a tiny cutting, or watch a new seedling come into bloom for the first time. We have a large greenhouse, with a 5′ x 15′ cutting bench, in which we use a lead cable for bottom heat, and a fog-line for easy watering. The rest of the greenhouse is not heated. The rooted cuttings are transplanted into other benches for one more year. They are moved into the open ground where we have very little shade or protection, so they really have to take it. We grow only the rhododendrons that are hardy in our particular area,* knowing that if they can grow in our garden, with reasonable care they can grow in yours.

With reference to the word "dwarf" rhododendrons, I actually prefer to use "slow-growing." They are not dwarf in the true sense of the word. They are naturally slow-

*Mr. and Mrs. Caperci are enthusiasts on this subject and the leading growers of small rhododendrons around Seattle.

*On the southern outskirts of Seattle

growing, small leaved, and just as husky and hardy, if not more so, as their larger relatives. Given ten to twenty years, many of them will grow to a fairly good size, such as our plants of *R. hippophaeoides,* which are almost three feet tall with as much spread. Incidentally, this plant blooms lavender-blue, which many people say they do not care for. But it is most striking when seen at dusk, when so many other colors look faded.

Small growing rhododendrons are more suited to the family gardens, low-windowed houses and rockeries that are so prevalent in our area than the larger growing kinds can ever be. Because of their size, a larger selection of plants can be used, thus giving a longer period of bloom and more contrast in plantings. So many of the varieties like the full sun that they are particularly suited to rockeries and frontal plantings.

Most of the small rhododendrons bloom when very young, so that you can enjoy the pleasure of growing them yourself and still not have to wait several years to see them in flower. They will just be more beautiful each season. Never will you have to worry about dwarf rhododendron "overgrowing the window" or "crowding out everything around it."

We are so often asked which are our favorites. This is a difficult question to answer when, as you may have already guessed, we are quite prejudiced toward all of the small-growing varieties. Giving due consideration to the query, however, our personal preference runs to the species, probably the group known as the *Lapponicum* Series. This is a group of tiny-leaved rhododendrons that in our Pacific Northwest region seem to like to bloom in the fall as well as the spring. With few exceptions, plants of this series grow from a few inches at maturity to about three feet.

Below—
Rhododendron campylogynum var. *charopoeum* 'Patricia' exhibited at Rhododendron Show May 21, 1959, by Mr. and Mrs. J. F. Caperci, Rainier Mountain Alpine Gardens.

FIG. 1 PHOTO BY: WILLIAM ENG

The majority of them tend to the lavender color, such as *R. intricatum, R. complexum, R. hippophaeoides, R. fastigiatum.* There are some good deep purples, *R. russatum* or *R. cantabile,* and *R. impeditum;* rose, *R. ravum* or *R. cuneatum;* white, *R. microleucum,* and yellow, *R. flavidum* and *R. chryseum.* But there are so many of the hybrid, slow-growing rhododendrons that lend themselves beautifully to landscaping that they must be mentioned also. 'Mayday' is one gem, with its low, spreading habit, pretty leaves with the bright indumentum and elongated orange-red flowers. Of the same type, 'Jock,' which is bright pink, and 'Elizabeth,' rose-red, are also favorite plants. All of the *R. Williamsianum* hybrids are excellent in our estimation; 'Bow Bells,' 'Moonstone,' 'Thomwilliams,' 'Arthur J. Ivens,' 'Humming Bird,' 'Treasure' and 'Cowslip,' to name a few.

With what, we hope, is pardonable pride, we would like to point to 'Patricia' as one of the best all-round small-growing rhododendrons. Just recently officially named, this is a new hybrid of our own creation. It was originated from a *R. campylogynum* seedling. In ten years it has reached a height of twelve inches with as great a spread. It has small, rounded, medium green leaves that turn bronzy in the fall, loads itself with magnolia-red, bell-shaped flowers in May, and has done beautifully in every location and under every condition we have given it (fig. 1).

Dwarf rhododendrons for the most part are not difficult to grow. Most of them strike readily from cuttings, and grow well from seed. Of course, growing hybrid rhododendrons from seed one never knows just what will result, but it is interesting to find out, and that is one way new varieties are developed. Many of the species grow true from seed. Our first experience in growing dwarf rhododendrons from seed came from a batch of *R. racemosum* seed sprinkled over a mixture of peat and sand in a homemade box. This was placed on a built-up table by the basement window. The seed was sprinkled with water very carefully each day, and studied with a magnifying glass and great anticipation each night. They sprouted and grew. From this small box of oh-so-lovely *R. racemosum* seedlings grew our nursery, too. So, if I may, I would like to say a word of caution to those who might plan to experiment with growing some dwarf rhododendrons either from seed or cuttings just for your own garden. "Be careful"; you might have good luck the first time like we did. And then the search for new plants, and the temptation to try to hybridize new varieties will never end. But then, the anticipation and excitement of watching small plants grow and bloom, and the thrill and satisfaction of admiring them in all their glory, is worth all the planning—and waiting—and work—that you will have put into them.

Some Comments on Crossing Rhododendrons

HALFDAN LEM*

AFTER moving to Seattle from Ketchikan, Alaska, in 1934, in hope of starting a rhododendron nursery at this site, I had my first experience of a hard, cold winter. This surprised me greatly, and many of my small rhododendrons which I brought with me from Alaska winterkilled. We had zero and even below that the first winter here. I could readily see that my Asiatic rhododendrons had to be hardened before I could succeed.

After some years I had in flower such hardy species as *R. Smirnowii, R. caucasicum, R. brachycarpum, R. catawbiense* 'Album,' *R. Williamsianum,* and also a few hardy hybrids. These I selected as parent plants for my first attempts in crossing rhododendrons.

The first year I performed some thirty crosses, and many seedlings of these have now flowered for many years. They are all hardy on this coast; some of them may even be hardy in more severe climates than ours.

*Mr. Lem's nursery is on Highway 99, just north of the city limits of Seattle.

The seedlings have flowers in nearly all colors, and there are many distinctive rhododendrons among them to be named as we go on. I will mention a few outstanding seedlings:

Rhododendron Smirnowii X 'Fabia' has produced fine orange-yellow flowers.

R. catawbiense 'Album' X 'Fabia' has given us 'Wizard' which is a gold cup plant with salmon-orange flowers.

R. caucasicum X *lacteum* 'Mary Swaythling' has produced some hardy plants with pale yellow flowers.

R. brachycarpum X 'Fabia' some dwarfish spreading plants with smaller orange and salmon colored flowers.

The cross 'Anna' X 'Dido' we named 'Cameo.' This is one of our finest seedlings so far and flowered for the first time last year.

'Anna' X 'Marinus Koster' we named 'Walloper.' This is the sturdiest plant of all my crosses, the flowers being large and in pink shades.

'Ole Olsen' X 'Fabia,' we named 'Jingle Bells.' It is orange-yellow in color with mahogany red shadings; we think it very beautiful. 'Vulcan' X 'Nereid' is named 'Witchdoctor.' The color is dark scarlet with extended sepals. 'Fabia' X *R. Bureavii* we have named 'Fabur.' The flowers are orange to salmon, the leaves having cinnabar red indumentum,—beautiful!

I have used *Williamsianum* in many crosses with our finest hybrids, and have obtained a few plants with red, orange and salmon shades. *R. repens* X 'Letty Edwards' and *R. repens* X *R. campylocarpum* have large flowers in red and salmon shades also.

The several *R. lacteum* crosses we have are slow growing and only a few have flowered so far, but although they are slow to bloom, they make up for it in their interesting foliage and shape of growth. In later years we have used 'Dido' in crossing with the hardy species, and this has proven to give still better results.

Some Notes on Rhododendron Hybridizing

LESTER E. BRANDT*

THERE has been quite a bit of rhododendron breeding here in the Northwest, particularly since the war, as a large number of the newer hybrids and better species were imported from England at that time.

I have been interested in crossing among some of the modern hybrids; since there is no *R. catawbiense* or *R. ponticum* in their breeding, the chances are very good for something new to evolve.

I have used R. 'Margaret Dunn' for a number of crosses, using it on 'Azor,' 'Tallyho,' 'Day Dream' and other hybrids. There has been a very wide range of colors from these crosses, and the majority of them have been good, a few very good. I have named and registered some of them, and propagated them as clones.

I have also been interested in *R. Forrestii* var. *repens,* and have made several primary crosses, using varietal forms, such as *chamaethauma* (salmon), the pink form, etc.

I have also been using some of the English primary hybrids of *R. Forrestii* var. *repens,* and crossing them with some of the larger hybrids and species, staying within the same color ranges, to obtain medium growing plants that are prolific in bloom and do well with the modern type of architecture.

I have also been doing a limited amount of hybridizing with the lepidote rhododendrons, as we do not want too many of these types available, particularly the *R. cinnabarinum* hybrids. They also blend well in modern plantings, as they are slender and twiggy and will also take some reflected light and heat. These could be used for espalier work on brick walls and pillars, as the salmon, orange and yellowish colors would go well with that particular background, and the lustrous dark green foliage is a beautiful contrast.

*Mr. Brandt, a previous contributor to the *Bulletin,* has his nursery some 22 miles south of Seattle, a mile west of Highway 99.

I have found that if pure colors are desired, the use of the Dutch and other older hybrids should be avoided as much as possible, although some of the clearer reds, used with the very dominant new reds such as 'Tallyho,' 'Grosclaude,' etc., will give a percentage of clear red colors, together with plant and bud hardiness. However, there will have to be a lot of selecting done, with most plants to be discarded.

There is still a great number of dwarf and low growing hybrids to be made, by using species other than *R. Forrestii* and *R. Williamsianum,* to get a different range of colors. All this takes a great deal of time, and is more for the coming generation to think about.

I think that a great deal of future rhododendron hybridizing will be done on the same lines that are being used for orchids.

Practically all of the modern orchid hybrids, of all genera, are combinations and recombinations of hybrids, with an occasional back cross to a species, growing on a large number of seedlings and then selecting the best.

This was done in Holland and England with rhododendrons 50 years and more ago, and from these selections have come most of the rhododendrons in commerce now. By doing this with the newer hybrids in the yellow, orange and pastel colors, there should be some very beautiful and different rhododendron plants in the future.

Some of My Observations on Rhododendron Hybridizing

H. L. Larson*

FOR A NUMBER OF YEARS I have hybridized rhododendrons in our nursery. This program has been quite moderate as we do not have the acres to grow hundreds of plants of any one cross. I have tried to keep in mind the trend in home construction so that it has been foremost in my mind to create moderate sized plants suitable for landscaping these dwellings. Low growing plants such as *R. Williamsianum, R. didymum, R. repens* and their hybrids have been used with such tall growing plants as *R. Thomsonii, R. calophytum, R. Souliei,* 'Queen of the May,' 'Romany Chal,' 'Marinus Koster' and 'Diva.'

In the late 1930's I made a few crosses where both seed and pollen parents were tall growing varieties. The best of these crosses was 'Marinus Koster' X 'Snow Queen.' Only three plants of this cross were grown to flowering size and all have been given the preliminary award by the American Rhododendron Society. These plants were subsequently named 'Mrs. Elizabeth Titcomb' (white), 'Diane Titcomb' (white edged pink) and 'Julie Titcomb' (pink). You may wonder what happened to the remainder of these plants as there were about one hundred in all. When they were about three years old I began to wonder why I made the cross as I knew they would become large plants suitable mostly for woodland plants and borders. At that time we received cuttings of the entire 'Naomi' collection and decided to use this group as understock as they were about three years old and slightly larger than a lead pencil in thickness. I have often wondered how many good rhododendrons would have come from this first cross if all of them had been grown to flowering size.

In using the dwarf rhododendrons one must keep in mind that they are shy bloomers with two and three flowers to a truss and to get a satisfactory hybrid the other parent must have a large raised truss with twelve or more florets. I have seen very few crosses of *R. Griersonianum* which have been really outstanding, with 'Elizabeth' and 'Fabia' probably the best. The use however, of plants having *R. Griersonianum* in them such as 'Fabia,' 'Fusilier' and 'Diva' have produced a number of beautiful plants in our nursery. 'Moonstone' X 'Fabia' has given us a number of low-growing yellows with large flowers, some with a calyx and some without; all how-

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ever, are yellow. *R. Souliei* X 'Fabia' will give medium growing plants with good foliage but in a great variety of colors. They include reds, pinks and bicolors, such as yellow centers with a delicate pink edge. The flowers are quite flat with nine to twelve in a truss.

'Fusilier' crossed with any pink or white rhododendron with a large truss will produce hybrids in various shades of pink with some heavily spotted throughout the blossom. I would suggest 'Fusilier' be used with garden hybrids which have some *R. catawbiense* in them to increase hardiness. *R. didymum* X 'Diva' produces medium-sized compact plants in the red shades from almost black to very bright.

Since 1955 I have been using plants that have been developed here for hybridizing; 'Virginia Scott,' a clear yellow, has been used extensively. 'Virginia Scott' X 'Belvedere' has given us 'Florence Blethen Duffy,' a good compact yellow. 'Virginia Scott' crossed with the 'Naomi' forms has given us pinks much like the latter even when the former was the seed parent. 'Virginia Scott' X 'Alice Franklin' has given us a very large yellow similar in size and form to *R. Loderi* but in a more compact truss. The shade of yellow of this plant is similar to 'Buttercup.'

A few crosses have been made involving the Lepidote, or scaly leaved, group of rhododendrons, with *(R. ciliatum* X *R. leucaspis)* X *R. leucaspis* giving us a wonderful plant named 'Lucy Lou' by the California Chapter of the A.R.S. This plant has large white flowers and magnificent foliage. Other crosses such as *R. calostrotum* X *R. ciliatum* 'Bergie,'

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Some Notes on Rhododendron 'Bow Bells' as a Parent

RUDOLPH HENNY*

IT is always interesting to guess what combination of rhododendron parents would make a new and novel hybrid. After years of expectant waiting, hoping and caring, the hybridist is finally confronted with the results of what was planned to be an improvement over the past creations. Since parentage is so important, and finding the correct ones, whether by luck or theory, it is of course, safer to look back and name a few that have proven excellent parents.

The *R. Williamsianum* hybrid 'Bow Bells,' almost untried for so many years, has been an excellent parent. Crossed with *R. Souliei* two new hybrids have been selected. 'Finesse,' a dense growing, fine foliaged plant, with large flat shrimp-pink blooms, and 'Whimsey,' almost identical in habit and foliage with lighter pink, but not so flat blooms as the above. Another new hybrid that shows great promise is 'Honey' ('Bow Bells' X *R. Wardii)*. This hybrid is almost prostrate, and is now nearly three feet across, and not over a foot high. The bloom is also upright, and consists of six to eight flowers of an Egyptian Buff color. I have noticed that the seedlings of 'Bow Bells,' even though they often follow the habit of *R. Williamsianum,* mostly carry their bloom in an upright rather than in a drooping manner. This is a very effective novelty in the dwarfer plants where one usually is forced to look down on them unless they are being grown in a raised bed.

'Bow Bells' *(R. Williamsianum* X 'Corona') is now well known and widely distributed, and has proved to be a great favorite in all gardens. Its effect as a parent will be noticeable, as previously mentioned, with most of the seedlings having upright blooms. This stems from the parent 'Corona' which has an almost perfect upright truss. Though the parentage of 'Corona' is unknown its offspring invariably show the trait of a truss of upstanding bloom. Even when crossed with the loose droopy flowered hybrid 'Fabia' many of the seedlings still had excellent trusses, though the bloom in many instances was small.

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GROUND COVER COLOR

Mrs. Pendleton Miller*

YOU will find the terms "ground covers" and "maintenance" universally used as if they were synonymous! This attitude represents such a very limited approach to the subject. Whether the designated area needs only three plants or three hundred, it can also be a wealth of color and interest twelve months of the year. Throughout our rainy months our ground covers add refreshing character to the garden with glistening and intensified color; both new and old foliage, ranging from pinks, crimsons, bronze, reds and yellows to all the greens; clusters of berries (protected by bird feeders) in white, pinks, blues, purples and black, and always the joy of their spring flowers. Here we have an excellent opportunity to achieve unity created by the richness of variety.

Another valuable feature is in using ground covers as a means of breaking up too great a preponderance of rhododendrons or other shrubs. The proportional beauty of a large rhododendron can be greatly enhanced with a base planting of our native dogwood ground cover, *Cornus canadensis,* with its charming white flowers followed by clusters of red berries in the fall. If the shrub is kept open to allow filtered light, the new green foliage will take on red and bronzy hues for the winter. The hardy cyclamens are good here, too. Their many varieties, giving you a choice of blooming season (fall, winter, or spring), flower color (white, pink or crimson), as well as the shape and color of foliage which would be most complementary to the shrub.

There are seemingly hundreds to choose from since here again we find plants from all over the world thriving in our Northwest climate, although a few of the alpines and easterners demand certain considerations, as has been my experience with trailing arbutus *(Epigaea repens).* Normally being covered with snow for the winter, it resents (as do we all) being beaten and waterlogged by our heavy downpours. With the protection of a conifer with no low branches to keep out the light, and yet where you can keep the soil moist in summertime, it will thrive and appreciate the winter mulch of needles. While one plant was spreading to nearly three feet under these conditions, another was very unhappy. Placed, I thought, in a choice location with sharp drainage, ideal soil, and sheltered by an overhanging evergreen clematis. Well, it does *not* like being dripped on by the concentration of water running off the leaves; this is also true of the gentians which we so often want to plant near dogwoods.

Any plant as an individual has its varying degrees of interest, but once established in your garden its beauty is increased many fold or detracted from by its neighbor.

This is why I so love the gaultherias, from the minute creepers to the upright or spreading forms with their tiny or large, round or pointed foliage, and in every color. They could be planted in a group of one of each variety (upwards of thirty) and your eye would pass pleasingly across the entire unit without being aware of where one plant began or another ended. The gaultherias are hardy. They thrive in our sandy soil and the majority will do their best in full sun if given moisture and sharp, sharp drainage. In fact, success begins with, or ends without, drainage. If your soil is dry, add as much as you can of previously soaked peat. If too poor in quality, add leaf mold and peat with sand for drainage. Regardless of age manure can be sudden death to any plants feeding on surface soil. An annual dressing of leaf mold and peat seems to satisfactorily provide the needs of all, trees, shrubs and others down through the ground covers.

My first planting of gaultherias consisted

*The Miller Garden in the Highlands contains one of the most notable collections of ground cover plants in the Northwest.

of ten wee *G. procumbens* plants in full sun near the top of a bank. In one season they disappeared. In two years new red foliage popped up everywhere. The third and fourth year saw a carpeted area over ten feet square, and now in the spring the fat red berries are still in evidence to accent the gentian blue flowers of *Chionodoxa sardensis* which are scattered throughout. Never underestimate a gaultheria! This behavior can be caused by transplanting. They can be moved about in the garden at will, but when taken from the protection of a nursery to be placed in full sun, try to move them either late fall or early spring. I often use bare and twiggy branches built teepee fashion over the plant until established.

The gaultherias are basically insect resistant but along with the other ground covers they are sprayed annually (spring) with a mixture to discourage both chewing and sucking insects at once, practical if you like to keep spraying at a minimum in appreciation of the birdlife.

In transplanting natives from the country, the feeder roots are often scarce and liable to dry out quickly. Covered with previously soaked peat, and then wrapped in a plastic bag will enable you to plant at your convenience. This procedure can make a difference of several days as against several hours of existence. The same applies to moving plants that like a dry, sunny exposure, such as *Ceanothus prostratus*. Submerging the roots in a wheelbarrow filled with previously soaked peat and with some thrown in the hole for good measure, will tide the plant over until it becomes established again. Oregon grape (*Mahonia nervosa* or *M. repens)* is another deceiving one to transplant. Assuming the roots did not dry out when transplanted, even up to six months later it may suddenly look utterly dead. Merely cut off this dead foliage (unless you want it as a marker) and the following year a new plant will be unfailing.

Following are some suggestions in combining the features of various evergreen ground covers, which for the most part have spreading root stocks. Once established, they need only your admiration.

Full Sun

Against a large rock the branches of *Hymenanthera crassifolia* with tiny light-green leaves form an open rigid pattern and are covered with white berries in fall. Upwards through these branches come the large, glossy, heart-shaped red leaves of *Galax aphylla* which will have stiffly erect spikes of white flowers in spring. Also seen through these branches yet remaining low is the yellow to bronzy-red foliage of the heather *Erica cinerea* 'Golden Drop.'

This galax is used in the same fashion coming strongly through the prostrate branches of *Cedrus deodara* "Pendula.' Seen with the sun shining through the foliage, the red of the galax becomes brilliant.

Galax again at the base of both *Raphiolepis ovata* with its shiny, deep blue-green leaves

Below—
Gaultheria Wardii fruiting specimen from the Miller's Garden, The Highlands.

FIG. 2 PHOTO BY: WILLIAM ENG

and its neighbor *Gaultheria Wardii,* with arching, bristly branches of foliage in soft green, yellow and reddish hues (fig. 2). Here we have added the tiny *Pachistima Canbyi* with its angled branches of glossy deep green and narrow leaves appearing throughout the red galax. In other areas *Pernettya macrostigma,* which has a deep browny-green leaf, winds in and out of the galax.

Calluna vulgaris, 'Mrs. Pat,' a heather featuring the rich pink of the new spring foliage which increases to three or more inches before blooming in late fall, picks up the pinks in both the foliage and flowers of the low-growing gaultherias around it, such as *Gaultheria adenothrix* with its pendent white bell-shaped flowers wearing deep pink pointed caps.

In blending the bordering woodland with the garden, Epimedium runs into and through the salal in some parts, Oregon grape in others. Simple but so effective! The stalked leaves turn from a new spring green to pinks or yellow in summer and bronzy-red by fall when the salal is lush with blue-black berries. The pink flowers (on separate stems) of *Epimedium grandiflorum* 'Rose Queen' accentuate the salal. The bright yellow flowers of *E. pinnatum* are used with the mahonia. *E. Youngianum* 'Niveum' is also choice in that the new foliage is a lovely soft brown daintily crested with its white flowers on separate stems.

Descending steeply from this area and needing the help of the intensity of *Ceanothus gloriosus* are a number of *Azaleodendron Broughtonii* 'Aureum,' with their leathery foliage sunned to yellows, and *Fothergilla monticola* for both brilliant fall color and interesting thistle-like white blossoms. The shiny, thick and spiny leaves of the ceanothus serve to hold the plants down on the ground and add a profusion of blue flowers in spring.

Gaultheria nummularioides has long, slender, superimposed prostrate branches densely foliaged in contrasting light to dark green, with each branch laden with a row of blue-black fruit in season. This plant wants to carpet the ground luxuriously and is a showpiece under the red foliage of *Enkianthus perulatus,* as well as other species of enkianthus. The eastern creeping box huckleberry, *Gaylussacia brachycera,* planted with this gaultheria is breath-taking, the appearance being that the topmost branches of the gaultheria have turned a vivid red.

Gaultheria hispida is an upright gem bearing thick clusters of large pure white berries. The foliage is leathery, sharply pointed, and is colored deep green to bronzy-red. This should be used for variety in height with other gaultherias such as *G. Itoana,* having a heather-like habit of growth, white flowers and white berries.

On a sunny bank we have both large-leaved, low-growing rhododendrons, including *R. Valentinianum, R. Hanceanum* 'Nanum,' profuse bloomer with foliage reddening in the sun, 'Snow Lady,' white flowers with jet-black stamens, and *R. Williamsianum,* which will spread compactly and close to the ground in sun.

Vaccinium Vitis-idaea var. *minus* forms a thick mat only an inch high as it spreads downhill, repeating the same variety of color as the gaultherias, such as *G. procumbens, G. Miqueliana,* bearing masses of large white berries, and *G. Hookeri* with both foliage and fruit running towards pink and lavender hues. Several varieties of *Mahonia repens* ramble throughout, their new foliage so soft and delicate in light reds which later becomes precise and multicolored. All these provide a colorful evergreen base planting accenting the deciduous Knap Hill 'Oxydol' azaleas (white flower, yellow throat) on this bank, which have their own fall brilliance.

A number of the creeping *Arctostaphylos* varieties are used: *A. densiflora* 'James West' sends outwards and upward curving branches of soft light-green foliage effectively seen over *Gaultheria procumbens.* Both *A. Cushingiana* var. *repens* and *A. franciscana* are similar to our kinnikinnick but have an interesting irregular habit of growth and more colorful foliage.

Another favorite is *Heucherella.* The runners will trail up, over and through the lower

branches of other plants and thus add color to our dwarf northern Oregon oaks—*Quercus Sadleriana, Q. vaccinifolia,* and *Lithocarpus densiflorus* var. *montanus*. The new foliage is light green mottled with brown and the foamy-white flower spikes are timed with the appearance of the new buff-colored oak leaves. By fall the leaves are as large as six inches, fleshy, and multicolored with browns, pinks and reds.

To mention just one perennial herb, the plumbago, *Ceratostigma plumbaginoides (Larpentae),* has dispersed its seed at will over the years. Unnoticed until early fall and then we have a sudden splash of gaiety everywhere. The bright red leaves covered with intense blue flowers have come through the lowest branches of the conifers, the osmanthus, and in the most unlikely places, to remain until the winter frost.

Tufts of our native alpine fern, *Cheilanthes densa,* grow only several inches high with each frond looking like a miniature conifer. Liking scree conditions, it is delightful to see growing under *Mahonia repens*.

A creeping mat of azalea, *Loiseleuria procumbens,* an Alaskan alpine, with its minute light-green leaves and pink flowers is attractively grown beneath the deep green of *Rhododendron Forrestii (repens)*.

Filtered Shade

Seen through the open branches of the tiny, narrow, light-green leaves of both *R. microleucum* and *R. trichostomum,* the schizocodons, *S. macrophyllus* and *S. soldanelloides* var. *ilicifolius,* defy description. The leaves are shiny, round, toothed, and a rich crimson and the pink tubular flowers on red stems are exquisitely fringed. Between these plants we have the thick, shiny, dark-green leaves of *Vancouveria planipetala* standing erect on short stems (white flowers on separate stems). Another fern, *Cryptogramma acrostichoides,* is compact, prostrate and provides the light green.

Beneath heavily textured rhododendrons (*Degronianum, Bureavii, bullatum,* etc.) lightened by the use of *Zenobia pulverulenta* with its racemes of white flowers and silvery-blue cast of the foliage, we have *Shortia galacifolia* and *S. uniflora* var. *grandiflora* 'Rosea.' Shiny leaves turn from a lovely light-green to bronzy-crimson and there are white or flesh-pink-fringed flowers on single red stems. Among these plants *Pieris (Arcterica) nana* grows only two inches high as a compact mat of dark shiny green with fragrant white flowers in early spring.

A carpet of the small but strong pattern made by a fern, *Blechnum penna-marina,* its fronds coming out of the soil at an angle in light to dark blue-green, surrounds *Gaultheria rupestris* which grows loosely upright and has small, round, shiny green leaves on dark brown wood, white flowers, and dark red berries. Roaming between the two, *Gaultheria oppositifolia* sends arched branches, also of dark wood, but having lighter green shiny round leaves. All this deep green lies at the base of the pink to wine-colored foliage of a grape vine.

In deep shade against the house a mass of wild ginger *(Asarum canadense)* with thickly superimposed, large, deep-green leaves (up to 8 inches) avoids being monotonous by the use of a fern, *Woodwardia Chamissoi,* with graceful broad fronds of a refreshing light green for the darkest corners. The shorter fronds of *Woodwardia fimbriata* are growing in the foreground. The dark green is carried up the wall by the glossy foliage of two vines: *Schisandra propinqua* and *Lardizabala biternata*.

Whereas *Kalmiopsis Leachiana* has a very small leaf, the shrub is so densely branched it is complemented by the use of a larger, basal-leaved ground cover, *Synthyris rotundifolia,* which has a lighter green, toothed, kidney-shaped leaf, not at all heavy, with lovely little racemes of blue flowers in spring. *Soldanella montana* answers the same purpose and is very neat with basal, circular, glossy green leaves and beautiful bell-shaped, fringed lavender flowers on 4-inch stems.

Epigaea repens has its large, crisp, light-green leaves lying close to the ground but softly curled in an upright fashion; it seems

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PLAN BEFORE YOU PLANT

Says O. E. Holmdahl*
As Told by Mrs. Esther Berry**

THE EXPEDITIONS of famous plant explorers were no more exciting than those of the amateur gardener who goes in search of a new rhododendron at his local nursery, and his smug pride over each new treasure that he finds is something to see. Surely, this is one of the real joys of loving a garden! Very likely it is also one of the reasons that there are so few really fine gardens. Often the collection of plants is very fine indeed, but somehow the "dream of beauty" doesn't quite come into focus. It is lost in an embarrassment of riches.

Searching for some of the answers that would give us more satisfying results, I thought of the beautiful gardens designed by Mr. Holmdahl. Nowhere else are rhododendrons used in such glorious profusion. I have asked him to give us some of the hows and whys that lie behind his perceptive understanding of their landscape values. These are my questions and his answers.

It seems to me that you use more rhododendrons in your gardens than most designers do; can you tell us why?

"Yes, there are several reasons. The rhododendron is probably the most versatile plant we have and nothing else makes such a fine display over so long a season. When we use them we are not limited to one color. The varieties are now so many and their colorings so various that we have every shade and hue of the rainbow from which to choose. By proper pruning we are able to get practically any form that we may desire. Their scope is further enlarged by the infinite variations of their natural growth habit and leaf structure, ranging all the way from the prostrate tiny foliaged *R. prostratum* to the large-leaved tree forms of the *Falconeri* series. Of course, there is also a practical consideration. With proper care they can be moved at any age or at any time of the year."

Will you give us some examples of the manner in which you use different rhododendrons to accomplish quite different effects?

"The large, heavy foliaged plants such as 'Pink Pearl' and its relatives 'Betty Wormald,' 'Eureka Maid,' 'Mother of Pearl' or 'Marinus Koster,' give substance and establish a feeling of stability and permanence to a planting. Others that are especially valuable for their leaf structure include *R. sutchuenense, R. calophytum, R. zeylanicum* and 'Sir Charles Lemon.' These have such handsome foliage that they would be valuable if they never flowered. The small foliaged plants such as *R. imperator* and *R. chryseum* can be combined with *Calluna* 'Hypnoides' or 'Mrs. Ronald Gray' to form a ground cover beneath a bonsai pine. They are also fine for rock work and dry walls. *R. hippophaeoides* and *R. viscosum* will do well in bog conditions, as do the Daboecias with which they combine so nicely."

Will you point out some of the more common mistakes that amateurs make when using rhododendrons in the garden?

"Probably the worst of all and the most common is the tendency to plant one of a kind. Usually there should be at least two or three and sometimes many more.

Often the collector becomes so enchanted with rhododendrons that he plants them to the exclusion of everything else. This is a great mistake, for banks of rhododendrons planted alone are heavy and tiresome. They need deciduous material interplanted with them to avoid monotony. Without these you have no concept of the changing seasons and the bright promise of spring is lost as well as the brilliant foliage colors of fall. The deciduous azaleas are splendid for this purpose, but they must be selected for growth habit and a leaf size that is structurally sim-

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ilar and complementary to the rhododendrons. *R. Albrechtii, R. reticulatum* and *R. Schlippenbachii* are especially fine. *Stewartia, Eucryphia, Hamamelis mollis* or any of the flowering shrubs that have a suitable branching pattern may be used, but always avoid the use of fountain-shaped plants such as *Weigela* or *Abelia* for they will create a feeling of disorder and confusion. It is well to include a few colonies of summer blooming things like *Anemone japonica* or *Lilium auratum* along the edge or in small bays in the border so that color will not be gone from the garden after the rhododendrons have finished blooming.

The planting will have a more interesting profile if the masses of rhododendrons also have intervening plant groups of a more vertical habit. *Tsuga Mertensiana, Abies amabilis* and *Abies lasiocarpa* are all suitable, provided they are given sufficient room so that their growth habit will not be restricted. The pines will serve best in situations where close planting is desired for they are attractive with the lower branches removed and the trunk exposed.

It is important to remember that not all the plants that you use in the garden can be rare or precious. Some are there because they give a background that harmonizes with what is in front or will enrich or give continuity to the picture as a whole. Continuity makes it absolutely imperative to have some repetition of a few plant groups at irregular intervals throughout the border. On this point it is well to consider the desirability of distributing plants that flower at the same season throughout the garden rather than concentrating on those that bloom in the spring, fall or summer in separate areas. One must take care to maintain an informal balance and color harmony between these groups that bloom together. Inattention to blooming time can result in some really horrendous color combinations.

Another thing that is frequently not considered is the necessity of preserving proper scale. It is wonderful if the larger plants in the foreground of the border are dressed to the ground with their own branches, but failing this they should be faced down with those which have foliage of intermediate size. 'Elizabeth,' 'Helene Schiffner,' 'Cunningham's Sulphur,' 'Rosa Mundi,' or the large leaved form of *R. mucronatum (ledifolia alba)* are all good. Never use fine foliaged plants like *R. pemakoense,* 'Moonstone,' or any of the small *R. repens* hybrids for this purpose. They will make little disconnected dabs of color scattered along the edges. They are best used in colonies by themselves with ground covers to separate them from the larger plants.

Cultural requirements cannot be ignored without unfortunate results. Some varieties including 'Loderi,' 'Mrs. E. C. Stirling,' 'Pink Pearl,' Faggetter's Favorite,' or 'Purple Splendor' actually rejoice in shade that is quite dense, but their blossoms fade quickly, the color is poor and the foliage burns if planted in full sun. At the other extreme are those of the *Lapponicum* and *Saluenense* series that require full exposure or they will become too rangy. Most varieties will thrive in filtered sunlight and almost all will require protection from high winds and hot afternoon sun."

What size plants do you consider most desirable for landscape purposes?

"It is best to buy plants in the largest size that you can afford because it is more satisfactory to work with plants that have already taken on the form that they will have at maturity. It may even be less expensive in the long run, for small plants will have to be moved many times as they grow and this moving often makes it necessary to rearrange the entire border. Amateurs often forget that plants should have the same relationship in size at the time of planting as they will have in ten years' time. They sometimes plant lower growing varieties behind the taller ones because they were smaller at the time of purchase."

Will you give us some of the plant combinations that you have found pleasing?

"Those that flower in the earliest spring seem especially valuable because there is not much color at that time of the year.

There is *R. mucronulatum, R. leucaspis,* 'Praecox,' 'Conemaugh,' *R. moupinense,* 'Cilpinense,' *R. ciliatum* and 'Rosa Mundi.' Grouped near *Prunus subhirtella* 'Autumnalis' with *Viburnum fragrans* or *bodnantense* they make a brave show.

I feel that the pinks have a singularly happy effect in the garden. 'Pilgrim,' the 'Naomi' group and 'Mother of Pearl' are fine together. I like to combine those that have a dark blotch, 'Mrs. G. W. Leak,' 'Chev. Felix de Sauvage,' 'Anna,' 'Mrs. Furnival,' 'Marchioness of Lansdowne,' 'Lady Longman' are in this group. Then I may add a few white flowered kinds, perhaps 'Loder's White' or 'Mrs. Lindsay Smith' which has an airy grace that fits into the spaces between the others very well. Generally I use the whites to break up the other color groupings, but with 'Mrs. Pearson' and 'Mrs. E. C. Stirling' I like the strong contrast of 'Purple Splendor.' All the varieties are intergrouped so that they are not planted in patches but in easy, irregular drifts. Among the salmon pinks, the vibrant color of 'Azor' combined with 'Mrs. Donald Graham' and 'Diva' give a good show late in the season. This combination will take full exposure better than most.

The *R. cinnabarinum* hybrids 'Lady Rosebery,' 'Lady Chamberlain' and 'Royal Flush' are handsome with *Styrax japonica.* They are at their best if planted in a situation where you look up at them.

Those with round leaves can be grouped together quite happily. This includes such gems as 'Moonstone,' 'Dormouse,' 'Bowbells,' *R. oreodoxa* and *R. campylocarpum* var. *elatum.*

Usually the reds are best used by themselves. With these it is necessary to be most careful in the selection of the shades of color. The clear red of 'Hon. Jean Marie de Montague' blends well with 'Radium,' 'Doncaster,' 'Pygmalion' and the lovely cream white of 'China.' 'Princess Elizabeth' is good with 'Mars,' 'J. G. Millais' and 'Rubens.' The pure white of 'Duchess of Portland' is fine with this group. Among the late flowering varieties, 'Romany Chai,' 'Romany Chal' and 'Trilby' complement each other.

Nearly all the yellow varieties go well together. I prefer *R. campylocarpum* to the hybrids but 'Lady Primrose,' 'Damaris,' 'Butterfly,' 'Diane,' 'Mrs. W. C. Slocock,' 'Harvest Moon' are all good. 'Elspeth' is less desirable —the flowers are smaller and the pink shading too prominent for my taste.

Most of the yellows and the blue tones are best in light shade and they harmonize with each other. 'A. Bedford' goes well with 'Adriaan Koster,' 'Mrs. Betty Robertson' and 'Blue Peter.' 'Purple Splendor' is a dramatic contrast for 'Goldsworth Yellow' and 'Broughtonii Aureum.' Either *R. Augustinii* or 'Electra' is delightful with *R. ambiguum.* 'Cunningham's Sulphur' and the lovely white 'Helene Schiffner' have a rather special charm but, unfortunately, they are both difficult to find.

I would hesitate to advise the use of the orange flowered varieties of the 'Fabia' type. It is always difficult to find a suitable place for it but if you like the color and you have a small area quite separate from the rest of the garden you might use it with 'Nereid,' 'Golden Horn,' 'Glory of Littleworth' and some of its darker hybrids."

Is it possible for an amateur to build a really fine garden without professional help?

"That depends upon how discerning you are and how long you are prepared to wait for it. If you have a sense of beauty and you are really sincere in your desire to learn the basic principles of good design, you should have a progressively better garden—each time you replant."

Preliminary work by the contractors for the second Lake Washington bridge is now proceeding on Foster's Island, near the northern tip of the Arboretum, which will be crossed at the existing grade level from east to west. To the west the bridge approaches will be connected by a complicated interchange to Empire Way, which will eliminate our original collection of mountain ashes (Sorbus) and the major part of the crab apples and rose species. Work in this section, however, is not anticipated before summer or early fall.

O. B. Thorgrimson

The Arboretum has lost an old and valued friend. Mr. O. B. Thorgrimson died on the 26th day of December, 1960, at the age of 86 years.

Mr. Thorgrimson took an active part in the organization of The Arboretum Foundation in 1934 and 1935. He carried on negotiations with the Corporation Counsel, which resulted in the lease of Washington Park to the University of Washington by the City of Seattle. The original negotiations were started with the Seattle Park Board, and Mr. Thorgrimson contributed valuable support and advice, which later resulted in the establishment of the University of Washington Arboretum and its control by the University of Washington.

Mr. Thorgrimson was appointed to the Arboretum Advisory Committee in 1935 and remained a member until the end of his life, although unable to attend meetings in recent years. He was also a member of the Arboretum Foundation Board of Directors for many years.

He considered the Arboretum as a sanctuary filled with living plants for everyone to experience the beauty and fragrance of flower and fruit, bud and leaf, bark and twig. As the poet said, "A place where quiet reigns and the spirit walks at dawn and dusk."

The Arboretum Foundation owes a debt of gratitude to Mr. Thorgrimson. The generous gift in his will for the Arboretum exemplifies the deep regard and concern he held during his lifetime for the success of this monumental project.

D. G. G.

Anyone seriously interested in our native flora will welcome a fifty-page mimeographed pamphlet entitled *Penstemon Nomenclature,* published by the American Penstemon Society as a supplement to their 1960 Bulletin. Included in the supplement is a chart of the subdivisions of the genus, with the species in each subdivision, and a list of all the names ever used in botanical literature referring to penstemons, and their present status. Mr. Ralph Bennett, the author, has a few extra copies which he will send at cost to anyone interested. Price $1.15; make check payable to Ralph W. Bennett and send request to him, at 5607 No. 22nd St., Arlington 5, Va.

An International Rhododendron Conference has been organized by the American Rhododendron Society, to be held at the Multnomah Hotel, Portland, Oregon, from Thursday, May 11 through Sunday, May 14.

Several notable visitors from overseas are expected to attend, including Dr. H. R. Fletcher, Regius Keeper of the Royal Botanic Garden, Edinburgh, Scotland; Sir Giles Loder, of Leonardslee, Sussex, England; Mr. Frank P. Knight, Director of the Royal Horticultural Society's Gardens at Wisley, Surrey, England; Mr. H. J. Grootendorst, nurseryman from Boskoop, Holland, and Dr. J. S. Yeates, of Palmerston North, New Zealand.

Following the Conference the Arboretum Foundation has arranged for Mr. Knight to give a lecture, illustrated by color slides, on the famous gardens at Wisley. This will take place at 8 p.m. in the Health Sciences Auditorium of the University, on Monday, May 15th. There will be no charge for admission and anyone interested is welcome.

AMERICAN HORTICULTURAL SOCIETY ELECTS OFFICERS

Dr. Donald Wyman, Horticulturist at the Arnold Arboretum of Harvard University, since 1936, was elected President of the American Horticultural Society at a recent meeting of the Board of Directors held in Washington, D.C. Dr. Wyman was a Director of the American Horticultural Society for fifteen years and former Secretary-Treasurer of the American Horticultural Council. He was presented the "Distinguished Service Award" by the Horticultural Society of New York last year.

Anemone or Windeflowre . . . that is to say, of the winde; for the flowre doth never open it selfe, but when the winde doth blow, as Pliny writeth.

"The Garden of Pleasant Flowers"—1629

ARBORETUM NOTEBOOK

This section is particularly designed for notes, information and queries concerning beautiful or unusual plants from growers of all types or experience. We solicit your remarks and ideas, but space limitations may sometimes restrict us to publishing those of the widest interest.

SASSAFRAS

ALMOST all trees and shrubs are more or less systematic in their choice of the pattern they use when forming their leaves. The Sassafras has thrown this custom to the winds and grows, sometimes, three different patterns of leaves on the same green twig and by this peculiarity has asserted its own personality. One leaflet may follow, more or less, the shape of many other tree or shrub leaves, resembling a small laurel, egg-shaped, without the laurel's shiny surface. A second leaf may have a definite lobe on each side of the central portion and still another looks for all the world like a child's mitten with a perfect thumb portion on one side of the central leaf. The leaves are not toothed. So it is easy to recognize this tree by the variety of its leaves.

Greenish-yellow flowers are prominent in the early spring. Its fall coloring is an orange-yellow and the fruits turn an unusual blue. It offers much to the fall garden.

In 1569 a Spanish doctor, Nicholas Monardes, in his book entitled *"A Natural History of the New World"* described the Sassafras tree and its value as 'A remedy for all diseases.' The Indians in America had long used its bark and roots for medicines and Sassafras is still used in many primitive portions of this country for its mildly stimulating qualities and for helping poor eyesight.

It is a native of the eastern United States and it is said the Virginians make beer from its young leaf shoots, while the cooks of Louisiana use the leaves for seasoning.

Long ago on London streets in the early mornings—it is said—cups of tea made from the leaves of Sassafras were sold to men on their way to work for its stimulating effects.

G. T. D.

INCARVILLEA

INCARVILLEA, a perennial rarely seen in gardens, is a beautiful and unforgettable specimen of plant growth. It belongs to the *Bignoniaceae* family. The flowers definitely resemble the bloom of the Trumpet vine, a member of the same family but also a rarity in this part of the country.

Incarvilleas come from China and Tibet. All are perennials, with fleshy roots. All like light, warm soils, deep, rich and well drained to preserve them from stagnant moisture in winter.

Incarvillea Delavayi is a vigorous species generally grown here. It was found in mountainous areas of southwest China by the French missionary J. M. Delavay and named for him by the botanist A. Franchet in Paris.

There are several other species but all with much the same characteristics. In my garden it grew near but not under a fairly large Stewartia. It has an exotic and very striking appearance. I was careful not to plant it near any of our American treasures; the contrast was too vigorous and sophisticated.

The trumpet-shaped flowers, from three to four inches long, grow in a cluster at the tip of a strong, graceful stem. The color varies a little. Mine were a pleasing red with a pale-yellow throat. It has dark-green cut leaves, sometimes two feet long, growing at the base of the plant in more or less of a circle from which the blossom stems emerge.

It never failed to bring comments of wonder and astonishment but was not too strangely beautiful to offend visitors to my country garden.

G. T. D.

Everything comes to life when Spring grows warm.—BION

Some of Our Favorites☆

Jasminum nudiflorum

IF one is asked in the generally floriferous seasons to name a particular garden favorite it is likely, in this region, to be a difficult choice. When the question comes in December or January and the householder gazes out of her window, her eye is likely to be stopped and held by the Naked- or Winter-flowering Jasmine, *Jasminum nudiflorum,* whose branches at this season are aglow with a multitude of lemon-yellow blossoms. It is a perfectly hardy (Zone V) deciduous trailing shrub, attaining an eventual length of about 15 feet, with numerous stems rising from the base and a pair of blossom buds appearing every inch or so along the emerald-green leafless twigs and branches of the previous summer's growth. The blossoms do not open all at once but burst out helter-skelter, taking turns in a seemingly disorderly order, so that the whole shrub, virtually from base to tip, is alight for the entire winter season. The plant against the west wall of our house (where its sun is limited to late afternoons), which was showing a few flowers at the end of October and was really abloom after mid-November, will continue to be a thickly jewelled decoration well into March, never minding any freezing interludes that may occur. It is regularly available for cutting and bringing indoors at Thanksgiving and Christmas. People who see it in the house frequently mistake it for some very early forced Forsythia, but its flowers, instead of being bells, are salverform—a six-petalled, three-fourths to one-inch dish on a thin tube of about the same length. They are not fragrant. After the flowers vanish in the spring the branches are well clothed with fresh green rather narrow leaflets one-half to about one inch long. At this time the plant is to be pruned somewhat, cutting back the branchlets that have just finished flowering. One landscaping authority* recommends that it be "draped down over a wall in a 10- or 15-foot curtain," but as such a spot was not available in our garden when two plants were given to us over 20 years ago, we started them on fan-shaped trellises. This was never a very satisfactory arrangement so several years ago we tied one to a simple arch composed of two eight-foot upright poles and a single horizontal across the top, giving our shrub the opportunity to stretch out to its full appointed length and us the privilege of seeing it from a corner window as well as passing in and out of our basement door under a charming archway. Now the plant on the east side of the house has a similar treatment, framing the kitchen window, and we are feeling very rich with its added gold in our view.

J. nudiflorum will be happy in any well-drained soil and probably almost any exposure. The winter-flowering purple Primula 'Wanda' and some Hellebores make congenial company at its feet. It is fairly easily propagated by cuttings (indoors or outdoors) or by layering. Considering that it was introduced to cultivation from China over 100 years ago it seems surprising that so valuable a garden asset is not more widely known and used.

DOROTHY METHENY

*Grant, John A. and Carol L.: *Trees and Shrubs For Pacific Northwest Gardens;* (F. McCaffrey, Seattle, 1943).

SWEET GUM
(Liquidambar styraciflua)

It was a delight to discover we had both a natural and bonsai Sweet Gum in our yard, sort of a mother-daughter combination. The bonsai was a small potted tree purchased at the Arboretum Plant Sale in 1952 and 'heeled in' while the house was being built. It disappeared in the freeze of 1955 and reappeared in 1958, root-bound, in a neglected corner of the garden, with minute leaves, like brilliant jewels, that cling sturdily well into February.

Because of its beautiful fall coloration of crimson, purples, yellow and orange-red, and its potential height of 100 ft., the Liquidambar may be used successfully as an accent plant. Its leaves are large, shiny and maple-shaped, its bark deeply fissured. It grows

readily in ordinary garden soil; ours is centered in the terrace area, where it is subjected to rather more wind than it should be, but here we can enjoy its beauty more.

Shaping of any tree during early years to maintain simplicity of line is an artistic fulfillment in itself; in the case of the Liquidambar it is a necessity. The leaves are large and heavy, the branches somewhat brittle, and unless the side branches are thinned out the weight will cause breakage in a heavy wind. Also, since it holds its leaves into December and January, a heavy snow will cause breakage. The fragrant juices exuded when such breakage occurs while the sap is up gives the tree its name 'Liquidambar.' Combined with *Fothergilla monticola, Parrotia persica* and Staghorn Sumac it forms a picture of almost unbelievable splendor in the fall sunlight.

MRS. FRANK CALVERT

Pieris floribunda

Pieris floribunda is our favorite shrub for mass planting. They grow in any situation, full sun, part shade or even deep shade. However, the flowers have been most profuse in full sun and very scarce in deep shade.

By late fall the yellowish bloom buds start to swell, increasing in size during winter, till they open pearly white in March. Those masses of light flower buds give all the appearance of bloom in the winter landscape. They create quite a light contrast to dark conifers and show off especially well under night illumination.

We raised *Pieris floribunda* from seed in 1951—just in a cold frame. They have been growing in an average of two feet deep woodsy loam, with good drainage. We water them about 3-4 times in the summer—thorough soakings. They have never had any fertilizer, nor did they need any spraying.

Most of them are growing with ground covers, *Vaccinium Vitis-idaea, Calluna vulgaris* 'Aurea,' *Erica carnea* 'Springwood,' *Pachistima Canbyi,* prostrate juniper, Salal or *Linnaea borealis.*

These plants came through the freeze of 1955 and the water shortage of 1958 without a curl in their sturdy leaves. They demand only one thing: to remove the spent flower clusters before the new growth starts, which is almost immediately after the flowers fade.

MRS. RAY BRANDES

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BOOK REVIEWS

Getting Started with Rhododendrons and Azaleas, by Dr. J. Harold Clarke. (Doubleday & Co., Inc., New York, 1960). Price $4.95.

THIS new book, just recently published, should be given a prominent place in every gardener's bookshelf and be referred to often. It represents much time, thought and research in which Dr. J. Harold Clarke has purposefully fulfilled every phase of rhododendron information.

The title itself suggests a welcome challenge to every amateur whether he be a beginner or more advanced. The author intended to promote real enthusiasm in this basic and easy-to-ready book of 260 pages. And he has done it artfully, not only with many illustrations but by careful selection of subject matter.

Reflecting his own modesty and academic background, Dr. Clarke did not intend to create an encyclopedic writing. Instead, he has tried to convey to the reader the over-all subject matter, Rhododendrons and Azaleas, without losing the reader's interest and, furthermore, has left no stone unturned to kindle a knowledgeable interest in the uninitiated, unless it be to seek further texts more detailed and scientific.

This writer, in reviewing Dr. Clarke's book, has but few suggestions and criticisms to make. First of all, the author says it would seem wise for the real beginner to plant azaleas first and then go on to rhododendrons, adding that, "this does not mean that rhododendrons and azaleas can be used interchangeably in the garden, although to some extent they can."

I would challenge these remarks, if my interpretation leads me to believe what I think they mean. I firmly believe both azaleas and many rhododendrons can be planted equally well with ease (barring a few areas). And, above all, a well-landscaped garden includes an intermixing and grouping of both rhododendrons and azaleas to complement one another. That is to say, they can be changed about for more effectiveness in color, texture and line, plus adding depth and perspective to the over-all picture. Besides, the deciduous azaleas give relief to the heavier green masses of rhododendrons or related plants.

Also, the chapter on propagation was thorough and well defined. But, since this subject is quite often the most difficult to accomplish, it might have been made more comprehensible to have included a series of pictures illustrating the various propagation methods, instead of the group of pictures showing individual named trusses of rhododendrons, especially since these are in black and white. The only colored plates shown are on the jacket design; unfortunately, they seem inharmonious and ineffectual.

In addition, the book is considerably repetitive, although Dr. Clarke's intentions might have been just that, so as to instill the many valuable points which are interrelated among the twelve chapters.

These chapters are divided into three parts. The first is about origin, uses and special requirements of rhododendrons and azaleas. Part two consists of methods of culture, fertilizing and pest control. Part three concludes with species and varieties for garden use (with no discussion of greenhouse or conservatory culture). The author consistently lists his plants in groups of fives, as a sampling only, with simple descriptions. He suggests that further information can be obtained of plants suitable to one's own community by visiting nurseries.

In conclusion, this book is most interesting and direct, factual and up-to-date. Dr. Clarke says: "I know of no other genus of woody plants which includes such a wide range of altogether delightful and useful garden plants." The reader cannot help but heartily and happily agree.

MRS. L. J. JANZEN

Rhododendrons and Azaleas, by Clement Gray Bowers. (Macmillan Company, New York, 2nd Edition, 1960). 525 pages, 28 color plates, 12 halftone illustrations and numerous line drawings. Price $25.00.

WHEN reading this book, an experienced West Coast rhododendron grower will be delighted but saddened, and occasionally exasperated.

Chapters on cultivation, nutrition, genetics and allied subjects are magnificent. Dr. Bowers examines old and new ideas in the light of his own vast experience, extracts the fragments of practical knowledge, and puts them together with skill. The result is a complete and down-to-earth treatment, valuable to every gardener. Also, the whole book is written in a way that keeps the reader on the track. A major merit is the arrangement of species descriptions by Series, which gives the novice an idea of the groups of similar plants from which he can choose.

However, from our regional point of view, it is unfortunate that Dr. Bowers has worked in a climatic area where few sorts of rhododendrons can exist. Inevitably, he writes most and best about the plants he knows, such as the "old ironclads" and East Coast natives. For example, he devotes one and a half pages to a description of *R. catawbiense*, which most Puget Sound gardeners are content to leave in its native Appalachians. Then, turning to some Pacific Northwest favorites, *R. mallotum* is described in four lines, *R. lepidostylum* in three, and *R. Bureavii* in five. Also, the reader will find that he must translate "hardy" to "hardy in New York and New England."

Obviously, as a buyers' guide for our climate, this is no substitute for the RHS *Rhododendron Handbook* or the Coxs' *Modern Rhododendrons*. But Dr. Bowers' emphasis on 30-below-zero hardiness is a regional rather than an old-fashioned approach. He clearly puts himself in the camp of the forward-looking growers by advocating the introduction of superior new forms from the wild.

Those who have the first edition (1936) will be interested in the amount of change. A comparison reveals numerous additions and deletions, but no major revision. Most of the new material is available elsewhere (or soon will be) and hardly justifies buying a new copy.

In summary, this book may well be worth $25.00 to the enthusiast who wants depth of background, but it is primarily aimed at growers elsewhere.

FRANK DOLESHY

Illustrated Flora of the Pacific States, by LeRoy Abrams and Roxana Stinchfield Ferris. Vol. IV. Bignonias to Sunflowers. (Stanford University Press, 1960). Price $17.50.

THE flora of no other botanical province of the West is now so amply and expertly described as is that of California. First, in this decade, came the hefty manual by Dr. Philip Munz, "A California Flora," which, in 1959, replaced the venerated manual by Willis Linn Jepson. And now we see the completed product of one of the most prestigious floristic undertakings of all, the fourth volume of a work known to many simply as "Abrams' Flora."

The last of the Abrams series is essentially devoted to the sunflower family, *Compositae*. Since Professor LeRoy Abrams' death in 1956, the work on the flora has been carried on by Dr. Roxana S. Ferris—or "Roxy" to her many friends in botany. Her long-time association with Professor Abrams as well as her intimate and distinguished work with western botany eminently qualifies her to have completed the Abrams' opus.

This fourth volume continues in the tradition of the other three, both in format and in the high quality of the taxonomic work. Each species is pictured with a line drawing. The illustrations have been executed with utmost skill by Doris H. Blake and Jeanne R. Janish. The artistic touch of Mrs. Janish will be recognized by those who know her work in the fourth volume of Hitchcock, et al., "Vascular Plants of the Pacific Northwest."

Both the Abrams work and that of Hitchcock and colleagues are constructed on the same general plan, overlap in the geographic range of their coverage, and serve as authoritative reference works for professional botanists. Therefore it is tempting to compare the two in their treatment of the family *Compositae*. First of all, the geographic overlap, though extensive (Oregon and Washington), is by no means complete, especially when one realizes the tremendous diversification of the family *Compositae* in southern California. One might expect the Abrams-Ferris treatment to be somewhat more uneven in the matter of species delimitation, since the work on several genera was done by various specialists. In contrast, Dr. Arthur J. Cronquist is solely responsible for the treatment of the composites in the Hitchcock flora. Spot-checking a few genera, I cannot see any significant differences of opinion. Thus, in *Senecio*, *Cirsium*, *Achillea*, *Petasites* and *Luina*, both the treatments take a conservative, or "lumper's" approach.

To the user of the two illustrated floras, comparisons of the printed page will undoubtedly catch the practised eye. The Stanford University Press has used with real skill a diversified typography so that boldface, italics and various type sizes make the flora a most workable, readable work. In contrast, the University of Washington Press, using the "veritype" process of typography, was unable to achieve the versatility in typographic style that a floristic work needs. However, the illustrations in the Hitchcock work have not suffered from excessive reduction as have some of those in this last volume of Abrams.

Those who own the first three volumes of Abrams will certainly want to complete their set of these valuable books. Others who wish to acquire a complete set of reference books on the flora of the three Pacific coastal states may think twice about the price ($17.50 per volume), then finally succumb to the inborn weakness of all botanical enthusiasts. A "built-in" extra value comes with the fourth volume; an appendix contains a key to the families as well as indices to common and scientific names for the plants of all four volumes.

A. R. KRUCKEBERG

Forestry and Shade Tree Entomology, by Roger F. Anderson. 428 pp. Illus. (John Wiley & Sons Inc., New York, 1960). Price $8.50

IN reviewing this book for the readers of the ARBORETUM BULLETIN, I would like to point out that it may not appeal to the average member of the Arboretum Foundation as it may seem much too technical and broad in its coverage. On the other hand, if one wants to learn something about insects, their life cycles, and how to identify those which may attack your trees individually or en masse, then I think the book will be found both stimulating and helpful. These facts are borne out in the first sentence of the author's preface where he states, "This book is both a textbook and a manual of forest, shade and wood products entomology. It is designed to help forestry and entomology students obtain an understanding of forest tree insect problems and the methods used to prevent damage to forests, trees and wood products."

The book is divided into two sections; Section 1 dealing with basic facts about insects and insect life, and Section 2 about the more important forest, shade-tree and forest products insect pest species.

Section 1, which consists of eight chapters, is a condensed basic treatise on forest insects. Chapter 1 points out the extent of forest and tree insect damage and the necessity of research and control. For the amateur who would like to know something about insects—their structure, physiology and development—Chapter 2 will probably be the most interesting and instructive. Other chapters in Section 1 deal with insect classification; insect abundance and ecology; insect control (both natural and artificial); insecticides and their application; and forest insect surveys. The last chapter is of only passing interest to the average amateur gardener.

Section 2 comprises a description of the more important insect pests that infest trees and wood; the damage they do and how they can be controlled. The insects are classified by the type of damage done, such as defoliating, sap-sucking, bark eating, inner-bark boring, wood boring, bud and twig boring, etc. Not only are they good descriptions of the insects, their damage and control, but they are further identified by photographs of larvae, pupae and adult individuals. If you can identify the damage suffered by your trees, you should, by the use of keys, descriptions and photographs, be able to run down the insect causing the damage and determine how it can be controlled.

The author is one well qualified to write on the subject of forest entomology. He is at pres-

ent professor of forest entomology in the School of Forestry at Duke University, where he has been teaching and doing research since 1951. He was formerly an entomologist in the Forest Insect Division of the U. S. Department of Agriculture. He holds a B.S. in Forestry and an M.S. and Ph.D. in entomology from the University of Minnesota.

GORDON D. MARCKWORTH

The Rhododendron and Camellia Yearbook, 1961, The Royal Horticultural Society, London, England (1960); price $2.00.

THE first article in the 1961 Yearbook is a description of the rhododendron collections of the King of Sweden, at Sofiero, in southern Sweden.

It is interesting to learn that a large number of rhododendron species and hybrids can be grown in that country. There is a long list given, including some that are fairly tender *(R. discolor, R. fulgens, R. Hookeri).*

Following is a description of rhododendrons growing in an entirely different climate, the Howth Demesne near Dublin, Ireland, where the temperature and humidity seem more to the liking of these plants.

To me, the most interesting article is the next, by Murray Adams-Acton. He tells of his long experience in collecting and hybridizing, about some wide crosses that turned out well; about some seemingly compatible crosses that didn't, and several interesting anecdotes about other growers.

A short note on mineral deficiencies by Dr. Henry Tod is informative, as is "Notes on Some Hybrid Rhododendrons," by Frederick Street.

There is a reprint of "*R. yakusimanum* and Its Home, Yaku Shima," from the *Bulletin of the A.R.S.* (Jan., 1960).

There are also notes on Rhododendron Shows in England, Scotland, and the U.S.A., but missing is the article on the Seattle Show, which used to be written by the late Harry Madison.

There are several articles on camellias, an obituary on the late Ralph Peer, who was a famous camellia collector, and a continuation of the history of some of the older camellias by C. E. Puddle and F. Hanger.

There is a list of members of the Rhododendron Group, but no overseas members are mentioned. The membership of the Rhododendron and Camellia committee concludes the book.

L. E. B.

Encyclopedia of Gardening, by Stanley B. Whitehead. Revised from the late W. P. Wright's "Everyman's Encyclopedia of Gardening." Second edition (C. T. Branford Co., Newton Centre, Mass., 1960). Price $5.00.

THIS book by Stanley B. Whitehead has as a background the well-known English publication last revised some twenty-seven years ago by W. P. Wright.

The past several years there has been a movement to revise and simplify the access to information concerning all horticulture. There have been many changes in plant names and plant culture. There are improved methods of reproduction, and new techniques in cultivation have been discovered.

Dr. Whitehead has made a splendid effort to bring the earlier publication up to date. He has listed plant names alphabetically according to the new rules of botanical nomenclature, including the old names for easy reference. Concise notes on the more important species or horticultural varieties are included and there is a calendar of garden work to be done at different seasons.

There is a brief, practical outline of Garden Science providing descriptions and illustrations of the structures and functions of plants.

The book is "hand-book" size (5x7½ inches) with good print and occasional blank pages for the reader's notes. It will certainly be a useful addition to the average gardener's library.

G. T. D.

Therapy Through Horticulture, by Dr. Donald P. Watson and Alice W. Burlingame (Macmillan Co., New York, 1960). Price $4.95.

SINCE time immemorial horticulture has been found beneficial to the body and soul of man. Any pleasant occupation which takes him out of doors into the fresh air seems to be good for him—even golfing. For centuries doctors have been sending their patients into the country to vegetate and recuperate. Even a farmer, after having raised enough food to support his family, will plant flowers and shrubs for his own enjoyment. Millions of people have found gardening not only pleasurable but helpful. It is logical that horticulture should be included in occupational therapy. It has been used successfully in psychiatric, tuberculosis and other hospitals as well as for rehabilitation in prisons and farms for alcoholics.

"Therapy Through Horticulture" is thoughtfully written and very well organized. The chapter on Therapeutic Evaluation is especially valuable for the layman engaged in this line of work. The activities analyzed in charts have been selected as some of the most typical projects for horticultural therapy. I found the chapter on therapy for the blind especially fascinating. This book indicates that leadership is necessary in volunteer groups, and outlines how these groups can contribute greatly to the well-being of the patient in occupational therapy.

The last chapter on Resources gives a good bibliography but also lists available catalogues where supplies may be obtained and lists books and bulletins for further study. This is an invaluable little textbook for anyone interested in using horticulture for occupational therapy.

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Ground Cover Color

(Continued from Page 15)

to flow along the ground. The very fragrance of its early spring white flowers will lead you to the plant. Our native creeping *Gaultheria humifusa* repeats the same habit with its small leaf and flows from the trailing arbutus around other plants such as *Polypodium Scouleri,* a distinctive western fern with thick fleshy fronds curling upright with a very simple pattern, the light green of the new against the very deep green of the older fronds. Here also is a treasure; the deep green and large foliage of the creeping *Orphanidesia gaultherioides* which has a lovely pale-pink flower; both flower and foliage somewhat resemble a rhododendron.

Among these heavy plants we have the dainty *Gaultheria sinensis.* Its low arching branches are covered with the very lightest green foliage in quite definite rows. It rambles over the utterly flat creeper *Mitchella repens,* which has tiny and tightly-packed dark-green leaves, conspicuous little white flowers and red fruit. *Epigaea asiatica* differs from *E. repens* in that the foliage turns a browny-red; it is not crisp, lacks the fragrant bloom of the other, but lends itself to easier cultivation. With this is used *Gaultheria ovatifolia,* its superimposed fleshy round leaves run the gamut of greens. Another runner used here, intermingling with the others, is our native twin flower, *Linnaea borealis.* Nearly elusive, with its graceful light green foliage, it has little pendulous bell-shaped pale pink flowers, two to each little two-inch stem. This group is used with the low-growing Leucothoes, repeating the fleshiness in the light green glabrous foliage of *L. Davisiae* and the strong deep green of *L. Keiskei.* These are ground covers in themselves.

In a deeply shaded area of naturally moist woodland soil it is a lovely sight to see the lightness of color and weight of the Linnaea interlacing *Pyrola elliptica,* with its roundish, basal, thin dark green leaves over two inches long growing in clusters to eight inches high, with white flowers above them.

Tiarella cordifolia can be allowed to spread through open woods or any shaded area. It is delightful under the dark green of conifers, with the spiky flowers creating a sea of white foam. The prostrate light green of the leaves is maintained all year and is often mottled with brown. Also good in open woods is *Waldsteinia fragarioides,* which has deep green foliage, yellow flowers, and is slow growing but makes a lovely background for *Erythronium Purdyi* (white with yellow throat). Any of the varieties of *Coptis* have an interestingly cut leaf. From the gem *C. quinquefolia,* which you couldn't miss despite the fact it is less than an inch high, to the taller species such as *C. occidentalis* reaching to nine inches with its tiered foliage, all present an openness and freedom for planting any variety of our shooting stars, trillium, and dog-tooth violets, bloodroot, dwarf columbine, etc.

Hence an occupation is provided with every incentive, and yet totally without pressure. Gardening, to me, is no escapism as much that we read would have us believe. Rather does it compensate for much that would otherwise be so definitely lacking.

In December 1960 the College of Architecture and Urban Planning was authorized to offer a degree of Bachelor of Landscape Architecture. The inclusion of this department with the other environmental disciplines allows the College to provide a comprehensive professional program.

A five-year curriculum of landscape architecture is similar in structure to the other curricula of the College. The first two years are devoted to general education (oriented toward the natural sciences rather than the physical) and basic approaches to "design." The final three years are built around a strong core of landscape design and are strengthened by service courses in the other colleges; Botany, Engineering, Forestry, etc. Of course, the Arboretum is an extremely important asset.

The case study method will be applied to urban redevelopment projects, public areas and even to individual residences. While the department is concerned with the RESTORATION and CREATION of new environments where the natural has been obliterated, our major emphasis will be on the CONSERVATION of the natural beauty of the Pacific Northwest.

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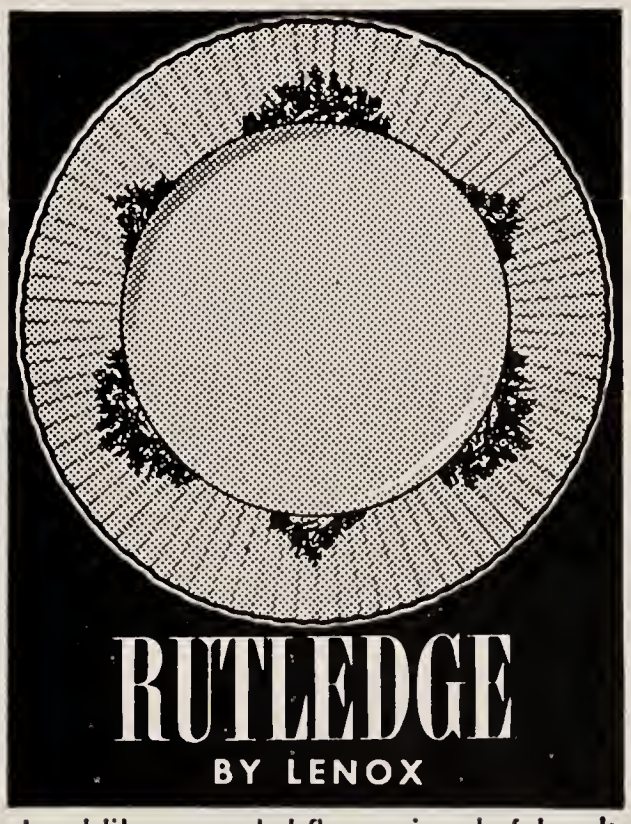

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Some of My Observations on Rhododendron Hybridizing

(Continued from Page 11)

called 'Cindy,' and *R. pemakoense* X 'Racil,' named 'Nancy Read,' are suitable for rockeries.

All the plants mentioned in this article as our own crosses are clones and not group names. All have proven hardy in this area which is usually several degrees colder than most Tacoma areas. With regard to hardiness we have used *R. Smirnowii* and *R. Metternichii* var. *tsukushianum* with *R. Williamsianum* and 'Fusilier.' Some of the plants of these crosses will flower this year and should the color prove satisfactory will be crossed with *C. catawbiense* 'Album.' It is my sincere hope that I will be able to develop rhododendrons with exotic colors that will withstand the rigors of the climate in parts of the country less fortunate than we in the Puget Sound area. In closing I wish to stress the point that these results are from my own experiences. Others may have entirely different results.

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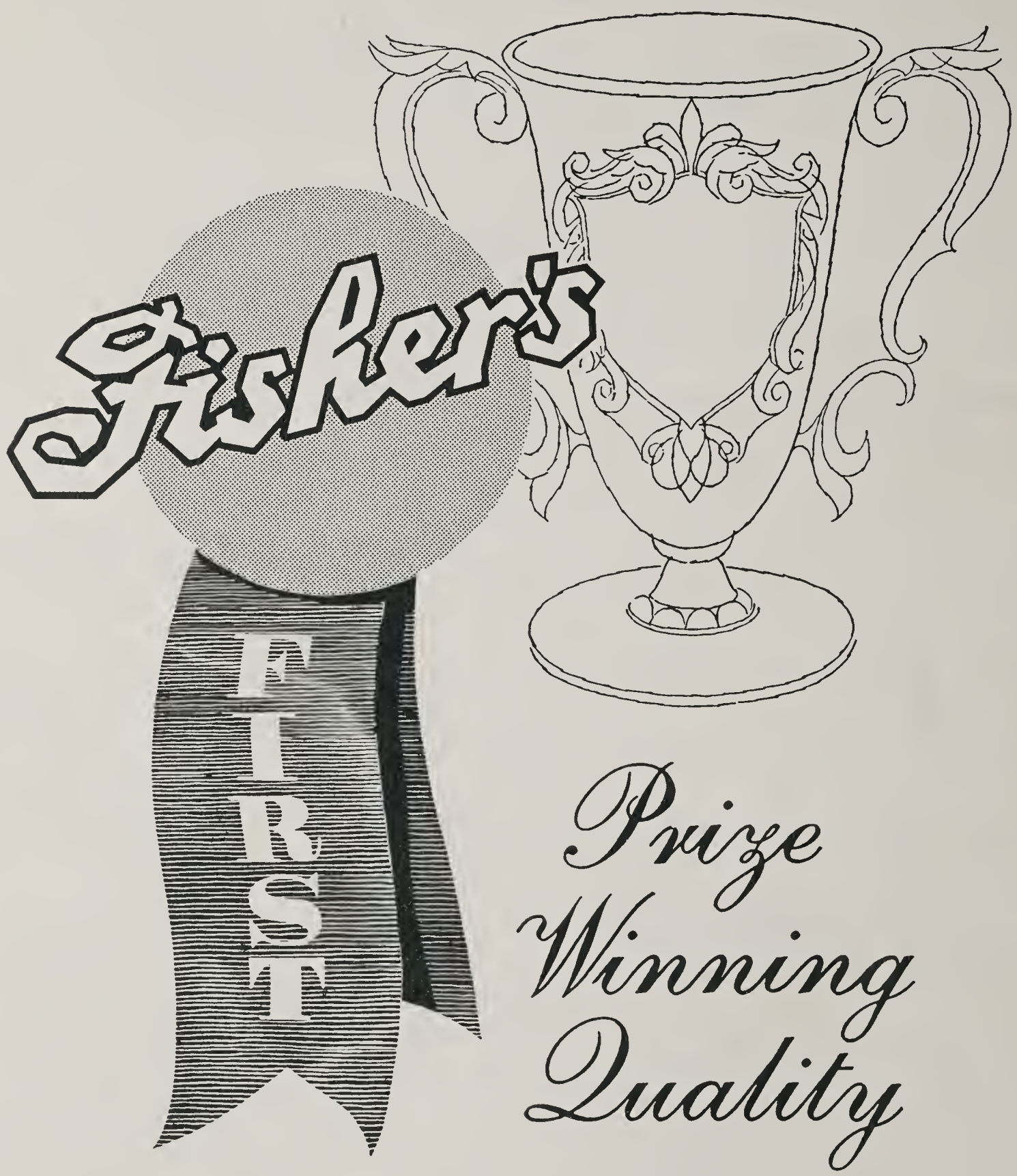

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